

Glu Ser Glu 15 Pro Met 30<u>5</u> Gin Gly Ser Lys Asn Lys Leu 10 Leu Asp Trp 25 Ser Glu Thr Giu Ala Val Arg Leu Phe Ile 20 Ser Gly Ala Pro Pro Pro Ser-NH<sub>2</sub> 35 Ile Phe Thr 5 Leu Gly Ser Asp

Glu Ser Glu 15 Pro Met <u>Gly</u> GI Gly Lys Lys Asn Ser Thr Phe Thr Ser Asp Leu 5 10 Leu Phe Ile Glu Trp Leu Trp 25 Ser Gly Ala Pro Pro Pro Ser-NH<sub>2</sub> 35 Gly Glu Gly Glu Ala Val Arg 20 His

1



### Leu NH2 1 Xaa<sub>1</sub> Xaa<sub>2</sub> Xaa<sub>3</sub>Gly Thr Xaa<sub>4</sub>Xaa<sub>5</sub>Xaa<sub>6</sub>Xaa<sub>7</sub>Xaa<sub>8</sub>Ser Lys Gln Xaa<sub>9</sub>Glu Glu Glu Ala Val Arg 25 Xaa<sub>10</sub>Xaa<sub>11</sub>Xaa<sub>12</sub>Xaa<sub>13</sub>Leu Lys Asn Gly Gly Xaa<sub>14</sub>Ser Ser Gly Ala Xaa<sub>15</sub>Xaa<sub>16</sub>Xaa<sub>17</sub>Xaa<sub>18</sub>-Z NH, K Ser Glu Trp Pro Pro Pro Ser Glu Phe Pro Pro Pro Ser Ser Glul PhelPro Pro Pro Pro Seri Ser Irp Pro Pro Pro Pro Ser Glu Phe Pro Pro Pro Pro Ser Ser Pro | Pro | Pro | Pro | Tvr | Pro Pro Pro Pro Ser Ser Trp |Pro|Pro|Pro|Ser| Trp Pro Pro Pro Ser Ser Glu Phe Pro Pro Pro Pro Ser Pro Pro Pro Pro Ser |Xaa, |Xaa<sub>2</sub>|Xaa<sub>3</sub>|Xaa<sub>4</sub>|Xaa<sub>5</sub>|Xaa<sub>6</sub>|Xaa<sub>7</sub>|Xaa<sub>8</sub>|Xaa<sub>9</sub>|Xaa<sub>9</sub>|Xaa<sub>11</sub>|Xaa<sub>12</sub>|Xaa<sub>13</sub>|Xaa<sub>4</sub>|Xaa<sub>15</sub>|Xaa<sub>15</sub>|Xaa<sub>17</sub>|Xaa<sub>1</sub> Glu Trp Pro Trp Pro Pro Pro Trp Pro Pro | Asp|Leu|Met|Phe|Val | Glu| Trp | 12 Glu Tro 120 Tro 35 <u>=</u> O G G 35 GE Glu Asp|Leu|Methaph|Ile Asplociy Met Phelile Asp|Leu|pGly|Phe|Ile Asp|LeupGly Phe lle Phelile Phelile Phelile Phelile **Phelile** Gly Glu Phe Thr Ser Asp Leu Met Phe lie Gly | Glu | Phe | Thr | Thr | Asp | Leu | Met | Phe | Ile Asplodiy | Leu | Phe | Ile Asp|Leu|Met|Phe|Ile Glu PhelSer Ser AspiLeu Met Phelle His Gly Glu Phe Thr Ser Aspleu Leu Phelile Met Phe le Asp|Leu|Met Leu Met Leu |Asp|Leu|Met Asp|Leu|Met His Gly Glu Phe Thr Ser Asp Leu Asp|Leu Glu Phe Thr Ser Glu Gly | Glu | Phe | Thr | Ser | Asp Phe Thr Ser Glu Phe Thr Ser Phe Thr Ser Ser Gly Glu Phe Thr Ser Gly Glu Phe Ser Thr Gly | Glu | Phe | Thr | Ser | Gly Glu Phe Thr Ser Glu Phe Thr Ser Glu naph Thr Ser Phe Thr His Gly His Gly 3 His Gly <u>|</u> <u>등</u> <u>≥</u> His His E E His His His 三 王 His His SE TVF Compound [SEQ.ID.NO] [50] [25] <u>4</u> 15 16 <u>@</u> <u>6</u> 202 22 [23] 12 <u>5</u> 21 စ က 4 9 $\infty$ တ 2 4 S က

2/26
SUBSTITUTE SHEET (RULE 26)

WO 00/41548

	72	$H_2$	NH <sub>2</sub>	NH <sub>2</sub>	72	$NH_2$	72	$NH_2$	12	12	$H_2$	$H_2$	$NH_2$	$NH_2$
7	돌	Ż	Z	Z	H	N	HN	N	HN	N	IN	Z	Z	N
(aa <sub>18</sub>	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser
aaı	Pro	Pro	Pro	Pro	Pro	tPro	tPro	hPro	hPro	tPro	hPro	MeAla	MeAla	
aaı	Pro	Pro	Pro	Pro	Pro	tPro	tPro	hPro	hPro	tPro	Po	WeAla	/eAla	/eAla
aa <sub>15</sub> X	Pro	Pro	Pro	Pro	Pro	<b>tProl</b>	tProlt	hPro	hPro	윤	윤		MeAta MeAta	<b>PeAla</b>
aa <sub>4</sub> X	Pro	Proll	Pro	Pro	Pro	<b>tProl</b> t	Prol	hPro	Pro	#Prof	h Pro	MeAla MeAla	Pro	<b>ReAlay</b>
Xaa <sub>9</sub>  Xaa <sub>10</sub>  Xaa <sub>12</sub>  Xaa <sub>13</sub>  Xaa <sub>4</sub>  Xaa <sub>15</sub>  Xaa <sub>16</sub>  Xaa <sub>17</sub>  Xaa <sub>18</sub>	Phe	Trp	Phe	Trp	Phel	Trp t	Trp	Trp	Tro	Phe	Phe	Trp	Trp	Phe Media Media Media
3a <sub>12</sub> X	Glu	Glu	Glu	Asp	Glu	Glu .	Olu	Olu	DID	Glu	Glu	Glu	Glu	Glu
aa <sub>11</sub> X	Val	tBuG (	tBug (	lle /	)   ell	)  e	)  eli	)    	)   	9	<u>e</u>	9	<u>)</u>	)  ə
aa <sub>10</sub> X	Phe	Phe	Phett	Pheli	Phel	Phe	Phel	Pheli	Phell	Phell	Phell	Phell	Phell	Phell
aa <sub>9</sub> X	LeuF	Met F	Leu F	Met F	Leu F	Met	Met F	Met F	Met	Je.	Leu	Met F	Met F	Leu
Xaa <sub>g</sub> X	ren	ne.	en L	eu	ne.	eu l	en l	en en	en	ne e	ne.	e e	Leu	Leu
Xaa, X	AspL	lds	Asp	Asp	Asp	Asp	AspIL	Asp	Aspl	Aspl	AspL	Aspl	AspIL	Aspl
	er	er A	e e	e	le	Ser	Ser	Ser	Ser	Ser	Ser	Ser	E G	Ser
Xaa <sub>5</sub> Xaa <sub>6</sub>	Thr S	Thr S	Thr S	Thr S	Thr S	Thr S	Thr S	Thr S	Thr	Thr	Thr S	Thr S	Thr S	Thr S
a <sub>4</sub>	PheT	Phe T	PheT	Phe T	PhelT	PheT	Phe T	PheT	PheT	PheT	PheT	PheT	PheT	PheT
a₃ Xaa₄	u P	<u>Б</u>	교	<u>a</u>	<u>n</u>			u P		<u>D</u>	1	민	GluP	크
a <sub>2</sub> Xaa				ly Glu	a	<u>S</u>		S V						
Xaa <sub>1</sub> Xaa <sub>2</sub>	s Gly	s Gly	s Gly	s Gly	s Ala	s Gly	s Gly	s Gly	s Gly	s Gly	s Gly	s Gly	s Gly	s Gly
Xaa	His	His	His	His	His	His	His	His	His	His	His	His	His	His
PON	[/:	[28]	[53]	[30]	三	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]
Compound (SEQ:ID:NO)	18 [27]	19 [2	20 [2	21 [3	22 [31	23 [3	24 [3	25 [3	26 [3	27 [3	28 [3	29 [3	30	31 4
Ωã			2	2	2	C	2	100	2	2	67	2	6	(C)
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Fig. 3B

20	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Ala	Arg	Arg	Arg
<u></u>	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Val	Ala	Val	Val	Val	Val
<u>∞</u>	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala
17	ng Ogn	Glu	Glu	Glu	Glu	Glu	Glu	Glu	<u> </u>	Glu	Glu	glu Glu	Glu	Glu	Ala	Glu	Glu	Glu	Glu	Glu
9	<u>ല</u>	Glu	Glu	Glu	Glu	Glu	Glu	Glu	<u>Glu</u>	Glu	Glu	Glu	Glu	Ala	Glu	Glu	Glu	Glu	<u>Glu</u>	Glu
<del>ਨ</del>	O G G	Olu	Glu	Glu	Glu	Glu	Glu	Glu	gla	Glu	<u>G</u> lu	Glu	Ala	Glu	Glu	Glu	Glu	Glu	alu	Glu
14	Met	Met	Leu	ren	ren	ren	ren	ren	ren	ren	ren	Ala	ren	Leu	Leu	ren	ren	ren	ren	Leu
13	Gl	uр	Gln	Gln	Glu	Gln	Gln	GIn	등	Gln	Ala	Glu	GIn	Gln	Glu	Gľn	GIN	GIN	GH	Gln
12	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Ala	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
=	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ala	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser
10	Leu	nəŋ	ren	ren	nəŋ	neŋ	neŋ	Ala	ren	Leu	ren	ren	Leu	ren	ren	neŋ	neŋ	Leu	Leu	Leu
6	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp
8	Ser	Ser	Ser	Ser	Ser	Ser	Ala	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser
7	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	ŢþŢ	Thr	Thr	Thr		Thr	Τĥ	Thr	Thr
9	Phe	Phe	Phe	Phe	Phe	Ala	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe
ည	直	Thr	Thr	Thr	Ala	Thr	Thr	Thr	Thr	Thr	Thr	Th	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr
4	र्ड	<u>G</u>	Gly	Gly	Gly	Gly	Gly	Gly	<u>G</u>	<u>G</u>	<u>G</u>	<u>G</u>	<u>G</u>	Gly	Gly	Gly	<u>a</u>	aly G	<u>a</u>	Gly
က	픙	<u> </u>	Glu	Glu	<u>ല</u>	Glu	O G G	Glu	<u> </u>	95	<u>ng</u>	<u> </u>	<u>B</u>	Glu	Glu	Glu	Glu	a G	<u> </u>	Olu Glu
2	र्ड	<u>G</u>	Gly	Ala	<u>a</u>	Gly	Gly	Gly	<u>a</u>	<u>a</u>	Gly	<u>G</u>	<u>S</u>	Gly	Gly	Gly	Gly	Gly	<u>a</u>	Gly
-	웊	His	His	His	His	HIS	His	His	His	HIS	His	His	His	His	His	HIS	'His	HIS	HIS	HIS
Amino Acid Position	Compound 1	Compound 2	Compound 3	Compound 4	Compound 5	Compound 6	Compound 7	Compound 8	Compound 9	Compound 10 HIS	Compound 11 His	Compound 12 His	Compound 13	Compound 14 His	Compound 15 His	Compound 16 HIS	Compound 17 His	Compound 18 HIS	Compound 19 HIS	Compound 20 HIS
										126										

# Fig. 4A2

Trp Leu Lys Phe Leu Lys	
25         26         27         28         29         30         31         32         33         34         35         36         37           Trp         Leu         Lys         Asn         MH2         R <td></td>	
25         26         27         28         29         30         31         32         33         34         35         36           Trp         Leu         Lys         Asn         NH2         NH2	
25         26         27         28         29         30         31         32         33         34         35           Tp         Leu         Lys         Asn         Gly         Gly         MH2         — <td></td>	
25         26         27         28         29         30         31         32         33         34           Tp         Leu         Lys         Asn         NH2         R	
25         26         27         28         29         30         31         32         33           Trp         Leu         Lys         Asn         MH2         —	
25         26         27         28         29         30         31         32           Trp         Leu         Lys         Asn         Gly         Gly         NH2         Ph           Phe         Leu         Lys         Asn         NH2         Ph         <	
Trp Leu Lys Asn Gly Gly NH2 Trp Leu Lys Asn NH2 Phe Leu Lys Asn NH2	
25 26 27 28 29 30  Trp Leu Lys Asn Gly Gly Trp Leu Lys Asn NH2 Phe Leu Lys Asn NH2	
25 26 27 28 29 30  Trp Leu Lys Asn Gly Gly Trp Leu Lys Asn NH2 Phe Leu Lys Asn NH2	
Trp Leu Lys Asn Gly Trp Leu Lys Asn NH2 Phe Leu Lys Asn NH2	
Trp Leu Lys Phe Leu Lys	일 일 일 일 일
Trp Leu Lys Phe Leu Lys	Asn
52 <u> </u>	Lys Lys
	हि हि
	Ala Ala
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22	1 1
Amino Acid 21 Position Compound 1 Leu Compound 2 Leu Compound 3 Leu Compound 5 Leu Compound 6 Leu Compound 6 Leu Compound 10 Leu Compound 10 Leu Compound 11 Leu Compound 11 Leu Compound 12 Leu Compound 15 Leu Compound 15 Leu Compound 16 Leu	1 6 8

	Amino Acid Position	1	2	3	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20
	Compound 21	His	Gly	Glu	Gly	Thr		Thr	Ser	Asp	ren	Ser	Lys	Gln	Leu	Glu	Glu	Glu	Ala	Val	Arg
<u>,                                    </u>	Compound 22	His	Gly	a B B	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu	Glu	Ala	Val	Arg
	Compound 23	His	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu	Glu	Ala	Val	Arg
<u> </u>	Compound 24	His	Gly	Glu	Gly			Thr	Ser	Asp	ren	Ser	Lys	Gln	Met	Glu	Glu	Glu	Ala	Val	Arg
	Compound 25 His	His	Gly	glu	Gly	Thr		Thr	Ser	Asp	Leu	Ser	Lys	Gln	ren	Glu	Glu	Glu	Ala	Val	Arg
	Compound 26 HIS	HIS	Gly		Gly			Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu	Glu	Ala	Val	Arg
	Compound 27 His	His	Gly	Glu	Gly		_	Thr	Ser	Asp	ren	Ser	Lys	Gln	Leu	Glu	Glu	Glu	Ala	Val	Arg
	Compound 28 His	His	<u>a</u>	a B B	Gly	ſ	<del> </del>	교	Ser	Asp	Leu	Ser	Lys	Glu	Met	Glu	Glu	Glu	Ala	Val	Arg
	Compound 29 His	His	Gly	Glu	Gly	Thr	-	Thr	Ser	Asp	Leu	Ser	Lys	GIN	Leu	Glu	Glu	Glu	Ala	Val	Arg
/26	Compound 30 HIS	HIS	Glý	a B	Gly	ł		Thr	Ser	Asp	Leu	Ser	Lys	Gn	Met	Glu	Glu	Glu	Ala	Val	Arg
	Compound 31 His	His	Gly	<u>G</u> lu	Gly	i	<del>                                     </del>	Thr	Ser	Asp	Leu	Ser	Lys	GIN	ren	Glu	Glu	alla	Ala	Val	Arg
	Compound 32 His	His	Gly	ng Gla	Gly		+	Thr	Ser	Asp	Leu	Ser	Lys	Glu	Met	Glu	Glu	Glu	Ala	Val	Arg
	Compound 33 His	His	Glý	ng G	Gly	Thr	<del></del>	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu	Glu	Ala	Val	Arg
	Compound 34 His	His	Gly	Glu	Gly		Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu	Glu	Ala	Val	Arg
<u> </u>	Compound 35	His	Gly	Glu	Gly	Thr	Phe .	Thr	Ser	Asp	ren	Ser	Lys	Gln	ren	Glu	Glu	Glu	Ala	Val	Arg
	Compound 36	SIH	Gly	Glu	Gly	Thr	Phe -	Thr	Ser	Asp	ren	Ser	Lys	Gln	Met	Glu	Glu	Glu	Ala	Val	Arg
	Compound 37	His	Gly	Glu	Gly	Thr		Thr	Ser	Asp	Leu	Ser	Lys	GIn	Leu	Glu	Glu	Glu	Ala	Val	Arg
<u>,                                    </u>	Compound 38 HIS	HIS	Gly	g G	Gly	Thr		Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	<u>n</u> g	Glu	Ala	Val	Arg
	Compound 39	₽ F	Gly	Glū	G S	Thr		Thr	Ser	Asp	ren	Ser	Lys	Gln	Leu	Glu	Glu	Glu	Ala	Val	Arg
	Compound 40	HIS	Gly	Glu	Gly	Thr		Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu	Glu	Ala	Val	Arg
	Compound 41 HIS	HIS	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu	Glu	Ala	Val	Arg
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39 38 圣 **P** 37 P3 P 5 <u>유</u> **P** 36 器 圣 Ala Ala Ala 35 34 र्ने हें टि िल् र्ड 승 <u>€</u> छि ਲੇ ਲੇ The state and the state and Ser Ser Ser 33 Ser 32 Ser Ser Ser Ser Ser Ser 꽃 Pro <u>م</u> Po P 0 **P P** <u>운</u> Pro **P** Po Pro 3 <u>ය</u> 8 <u>ල</u> ਲੇ ਲੁੰ ДÜ ਲੇ ਲੇ र्ट्ड ලි <u>≘</u> ਲੇ ļ., <u>©</u> <u>ලි</u> <u>ලි</u> <u>a</u> <u>ලි</u> <u>ල</u> र्ड खे <u>ම</u> हें ਲੇ ट्ट ਲੇ हें हैं र्ड ह GIV Asn 28 Lys **L/S** Ala <u>S</u> Lys Z/S Lys Lys r/s Lys 27 26 <u>e</u> 哥 Fea B [년 Ala <u>6</u> 哥 哥 핑 哥 哥 Fen 등 <u>6</u> 3 핑 등 9 <u>E</u> -en en F Phe Phe Phe Phe Phe Phe Phe Phe 으 P 으 으 <u>1</u> Trp 4 中 <u>e</u> 픙 24 匮 픙 픙 픙 픙 륭 픙 픙 픙 믕 릂 픙 np 믕 <u>응</u> 33 <u>e</u> <u></u> <u>e</u> <u>e</u> Phe Phe Phe Phe 品 Phe Pie Phe 22 Leu Leu Lea 9 Fea 등 등 冒 Leu Ten Len Fen 9 Fen Lee Lee E E Leu Fea <u>ਜ</u> Compound 30 Leu 7 Compound 21 Compound 27 Compound 23 Compound 24 Compound 26 Compound 28 Compound 29 Compound 31 Compound 36 Compound 38 Compound 39 Compound 22 Compound 25 Compound 32 Compound 33 Compound 34 Compound 35 Compound 40 Amino Acid Compound 37 Compound 41 **Position** 

Fig

	D	D	0	0	D	D	Ď	ס	Ď	g	5	D	0	6	<b>D</b>	0	0	6	D	ਰ
20	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Arg									
19	Val	Val	Val	Val	Val	اها	Val	Val	Val	Val	Val									
18	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala									
17	Glu	Glu	Glu	Glu	Glu	Glu	njg	Glu	Glu	ηg	glu	Glu	glu	Glu	Glu	Glu	Glu	Glu	nlə	ng B
16	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu									
15	Glu	Glu	Glu	Glu	Glu	nıg	Glu	glu	Olu	glu	nıg	glu	Ala	Glu	Glu	Glu	Olu	Glu	nıg	Glu
14	ren (	Met (	Met	ren	Met	Met	Met	en l	ren (	Met (	na-	na-	Met	Met						
13	Gln I	Glu	Glu	Gln	Gln	Gln	Gln	Gln	Gln	glu II	gln	Glu	Gln	Glu	Gln	Gln	Gln	Glu	Gln	Glu
12	Lys (	Lys (	Lys ((	Lys (	Lys (	Lys (	Lys (	Lys (	Lys (	Lys (	Lys (	Lys (	Lys (	Lys (						
=	Ser L	Ser	Ser L	Ser L	Ser L	Ser I	Ser L	Ser L	Ser L		Ser L	Ser L	Ser L	Ser L	Ser L	Ser L	Ser L	Ser L	Ser L	Ser L
9	en S	s na	en S	en S	s na	en S	s na	en S	ren S	pGly S	en S	S na	s na	Ala S	AlaS	Ala S				
	Asp L	Asp L	Asp L	Asp L	Asp  L	Asp L	Asp L	Asp L	Asp L	Asp L	Asp L	Asp  L	Glu L	Asp p	Asp L	Asp L	Asp L	Asp A	Asp A	Asp A
6																				
<b>∞</b>	Ser	Ser	Th	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser									
7	Thr	Thr	Thr	Thr	걸	Thr	Thr	<u>H</u>	Thr	TP	Ser	Ser	Thr	Thr	Thr	Thr	Ē	르	Ä	Thr
9	Phe	naph	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe								
5	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr									
4	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly									
3	Glu	Asp	Glu	elu	Blu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Oll							
2	<u>ਤ</u> ੇ	Gly	Gly ,	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	G G						
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<u> </u>	42 F	43	4	45	46	471	48	49	50	51	52	53	₹. Т	55	- 56 - F	57	82	59	8	늏
Amino Acid Position	Compound 42 His	Compound 43 His	Compound 44 His	Compound 45 His	Compound 46 His	Compound 47 HIS	Compound 48 His	Compound 49 Arg	Compound 50 His	Compound 51 HIS	Compound 52	Compound 53 His	Compound 54 His	Compound 55 His	Compound 56 His	Compound 57 HIS	Compound 58 His	Compound 59	Compound 60 HIS	Compound 61 HIS
An	ဒ္	ဒ္ဓ	වි	ঠ	වි	ટું	Š	ঠ		্র /26		ঠ	S	ပ္ပြ	වි	වි	දි	වි	වි	ટું

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 35 24 25 26 27 28 29 30 31 32 33 34 35 35 24 25 26 27 28 29 30 31 32 33 34 35 25 28 1																	_				
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 2 4 2	39		NH2	NH2																	
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 24 25 26 27 28 29 30 31 32 33 34 35 36 37 24 25 26 27 28 29 30 31 32 33 34 35 36 37 24 29 29 20 31 32 33 34 35 36 37 24 29 29 30 31 32 33 34 35 36 37 24 39 39 39 39 39 39 39 39 39 39 39 39 39	38			<b>IPro</b>	NH2	NH2	NH2														NH2
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 35 24 25 26 27 28 29 30 31 32 33 34 35 35 24 25 26 27 28 29 30 31 32 33 34 35 35 24 25 26 21 25 26 21 25	37			tPro	Pro	Nme	hPro	NH2													hPro hPro NH2
21 22 23 24 25 26 27 28 29 30 31 32 33 34  Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Pro Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nho Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Ry Ry Ry Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Ry	36		tPro	tPro	Pro	Nme	hPro	hPro	SHZ N												집
21 22 23 24 25 26 27 28 29 30 31 32 33 34  Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Pro Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nho Ser Ser Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Trp Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Ry Ry Ry Nh2  Leu Phe IIe Glu Phe Leu Lys Asn Ry	35		Ala												Ala						
21 22 23 24 25 26 27 28 29 30 31 32  Leu Phe IIe Glu Phe Leu Lys Asn Gly NH2  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Pro Ser  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Nme Ser  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Pro Ser  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Pro Ser  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Pro Ser  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly NH2  Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly NH2  Leu Phe IIe Glu Trp Leu Lys Asn NH2  Leu Phe IIe Glu Trp Leu Lys Asn NH2  Leu Phe IIe Glu Trp Leu Lys Asn NH2  Leu Phe IIe Glu Trp Leu Lys Asn NH2  Leu Phe IIe Glu Trp Leu Lys Asn NH2  Leu Phe IIe Glu Phe Leu Lys Asn NH2  Leu Phe IIe Glu Phe Leu Lys Asn NH2  Leu Phe IIe Glu Trp Leu Lys Asn NH2	34		Gly	Gly	Gly	Gly	Gly	Gly	ਲੁੰ										NHZ		ਰ
21 22 23 24 25 26 27 28 29 30  Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn MH2 Leu Phe IIe Glu Trp Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly NH2 Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly	33		Ser										Ser		Ser						
21 22 23 24 25 26 27 28 29 30  Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Gly Leu Phe IIe Glu Trp Leu Lys Asn MH2 Leu Phe IIe Glu Trp Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn NH2 Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly NH2 Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Gly	32		Ser										Ser		Ser						
21 22 23 24 25 26 27 28 29  Leu Phe IIe Glu Phe Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn Gly Leu Phe IIe Glu Trp Leu Lys Asn MH2 Leu Phe IIe Glu Trp Leu Lys Asn MH2 Leu Phe IIe Glu Trp Leu Lys Asn MH2 Leu Phe IIe Glu Trp Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn MH2 Leu Phe IIe Glu Phe Leu Lys Asn Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly Leu Phe IIe Glu Phe Leu Lys Asn Gly	31		tPro	Pro	Nme	Nme	hPro	hPro	Pro	꽃									Pro		Gly hPro Ser
21         22         23         24         25         26         27         28           Leu         Phe         Ile         Glu         Frp         Leu         Lys         Asn           Leu         Phe         Ile         Glu         Trp         Leu         Lys         Asn     <	30	꽃	Gly	Gly	Gly	Gly	<u>G</u>	<u>G</u> ly	ਨੁੰ	ਲੇ									खे	NH2	<del>डें</del>
21 22 23 24 25 26 27  Leu Phe IIe Glu Trp Leu Lys Leu Phe IIe Glu Phe Leu Lys Leu Phe IIe Glu Phe Leu Lys Leu Phe IIe Glu Trp Leu Lys Leu Phe IIe Glu Phe Leu Lys Leu Phe IIe Glu Trp Leu Lys	29	ලි	Gly	Gly	Gly	Gly	Gly	Gly	<u>ફ</u>	ਰੇ	꽃	ZHZ	NH2	NH2	NH2	NH2	NH2	NH2	<u>a</u>	Gly	ਲੇ
21 22 23 24 25 26 Leu Phe IIe Glu Trp Leu	28	Asn	Asn	Asn	Asn		Asn	Asn Gly													
21 22 23 24 25 26  Leu Phe IIe Glu Trp Leu	27	Lys	r/s	rys	Lys																
21 22 23 24  Leu Phe IIe Glu	26		ren	ren	Leu	ren	ren	Leu	Leu	<u>ਭ</u>	<u>8</u>	ne Ten	ne Ten	Leu	ren	Leu	ne-	ren	Fen	Leu Leu	<u>8</u>
21 22 23 eu Phe Ile	25	Phe	Trp	Trp	Trp	Trp	Trp	Trp	<u>T</u>	<u>e</u>	Phe	ф	Trp	Trp	Phe	Phe	Trp	Phe	Phe	Trp	<u>E</u>
21 22 22 22 22 22 24 24 24 25 25 25 25 25 25 25 25 25 25 25 25 25	24	ng Gln	<u>ng</u>	Glu	O O	Glu	D G G	<u>민</u>	굞	<u>응</u>	ළි	<u> </u>	<u>응</u>	a B	<u> </u>	Glu		Asp	믕	<u> </u>	ළ
	23	alle	<u>e</u>	lle	<u>e</u>	<u>Ile</u>		<u>=</u>		<u>e</u>		<u>=</u>	9	<u>lle</u>		Ile	tBug		<u>e</u>	<u>e</u>	<u>e</u>
	22	Phe	naph	Phe	Phe	Phe	Phe	Phe													
		Leu		ren	Leu	nen	Fe	E	E	<u></u>	<u>e</u>	ne Ten			ren			ne		_	E E
Amino Acid 21 Position Compound 42 Leu Compound 44 Leu Compound 45 Leu Compound 47 Leu Compound 49 Leu Compound 49 Leu Compound 50 Leu Compound 51 Leu Compound 52 Leu Compound 52 Leu Compound 54 Leu Compound 55 Leu Compound 55 Leu Compound 56 Leu Compound 57 Leu Compound 56 Leu Compound 57 Leu Compound 56 Leu Compound 57 Leu Compound 56 Leu Compound 56 Leu Compound 57 Leu Compound 56 Leu Compound 56 Leu Compound 57 Leu Compound 57 Leu Compound 56 Leu	Amino Acid Position	Compound 42	Compound 43	Compound 44	Compound 45	Compound 46	Compound 47	Compound 48	Compound 49	Compound 50	Compound 51	Compound 52	Compound 53	Compound 54	Compound 55	Compound 56	Compound 57	Compound 58	Compound 59	Compound 60	Compound 61 Leu

Fig. 4B;

## Compound No.

- 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys-NH<sup>E</sup>octanoyl Asn-NH<sub>2</sub> 62
- 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu 63

Phe Ile Glu Phe Leu Lys-NH<sup>E</sup>octanoyl Asn-NH<sub>2</sub>

4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu 64

Phe Ile Glu Trp Leu Lys-NH<sup>E</sup>octanoyl Asn Gly Gly-NH<sub>2</sub>

4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val 65

Arg Leu Phe Ile Glu Phe Leu Lys-NH  $^{\rm E}$ octanoyl Asn Gly Gly-NH $_2$ 

4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu 99

Phe IIe Glu Trp Leu Asn Lys-NH $^{\rm E}$ octanoyl-NH $_{\rm 2}$ 

<u>.</u>

4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu **29** 

Phe Ile Glu Phe Leu Asn Lys-NH $^{\rm E}$ octanoyl-NH $_2$ 

4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu 89

Phe Ile Glu Trp Leu Asn Lys-NH $^{\mathrm{E}}$ octanoyl Gly Gly-NH $_2$ 

4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu 69

Phe Ile Glu Phe Leu Asn Lys-NH<sup>E</sup>octanoyl Gly Gly-NH<sub>2</sub>

Fig. 4D

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# Fig. 4E1

Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Asp Leu Ser Lys Gln Ala Val Arg Arg Asp Leu Ser Lys Gln Ala Val Arg	u Glu Glu Ala Val Arg
Leu Ser Lys Gln Leu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Ala Veu Ser Lys Gln Met Glu Glu Glu Ala Veu Ser Lys Gln Met Glu Glu Glu Ala Veu Ser Lys Gln Met Glu Glu Glu Ala Veu Ser Lys Gln Met Glu Glu Glu Ala Veu Ser Lys Gln Met Glu Glu Glu Ala Veu Ser Lys Gln Met Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Glu Glu Glu Ala Veu Ser Lys Gln Leu Glu Glu Glu Glu Glu Glu Glu Glu Glu Gl	Glu Glu Ala
Leu Ser Lys Gln Leu Glu Glu Glu Leu Ser Lys Gln Met Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Leu Ser Lys Gln Met Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Glu	Glu Glu
Leu Ser Lys Gln Leu Glu Glu Leu Ser Lys Gln Met Glu Glu Leu Ser Lys Gln Leu Glu Glu Leu Ser Lys Gln Leu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Leu Ser Lys Gln Met Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu Leu Ser Lys Gln Leu Glu Glu Glu	Glu
Leu Ser Lys Gln Leu Glu Leu Ser Lys Gln Met Glu Leu Ser Lys Gln Leu Glu Leu Ser Lys Gln Met Glu Leu Ser Lys Gln Leu Glu Leu Ser Lys Gln Met Glu Leu Ser Lys Gln Met Glu Leu Ser Lys Gln Met Glu Leu Ser Lys Gln Leu Glu	
Leu Ser Lys Gln Leu Leu Ser Lys Gln Leu Leu Ser Lys Gln Leu Leu Ser Lys Gln Met Leu Ser Lys Gln Leu Leu Ser Lys Gln Met Leu Ser Lys Gln Leu	_
Leu Ser Lys Gln	O O
to tt t2 Leu Ser Lys	Met
Leu Ser Leu Se	Glu
10 Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu	Lys
Leu	Ser
48p	Leu
	Asp
Ser	Ala
7 Thr	Thr
6 Phe	Phe
5 기가	Thr
ම යු	Gly
Asp Gly Asp Gl	Asp
යි ය	
Ala	GV
Amino Acid Position Compound 70 Ala Compound 72 His Compound 72 His Compound 75 His Compound 77 His Compound 78 His Compound 78 Ala Compound 81 Ala Compound 82 Ala Compound 84 Ala Compound 85 Ala Compound 85 Ala Compound 85 Ala Compound 86 Ala Compound 88 Ala	
	Compound 89 Ala G

### 33 38 37 36 35 34 33 32 윤 30 꽃 꽃 NH2 SHN N NH2 NH2 몿 29 Asn 28 Asn Asn Asn Asn Asn S/ Lys Lys Lys Lys Lys **L**/S Lys Lys Lys Lys Lys Lys Lys 27 Lys T/S Leu Ee Ee E Leu Lea Leu 哥 Fe Fen 26 E E na | ခြေ <u>e</u> Fen <u>E</u> Lea E Fen Lee Lee Fea Phe Phe Phe Pie Phe Phe bhe 25 <u>1</u> <u>1</u> <u>d</u> T D Тгр 르 으 Ē 4 山 P P 응 මුල Glu 픙 <u>ස</u> 픙 륭 륭 픙 픙 픙 픙 픙 35 ළ 24 ළ 23 <u>@</u> <u>a</u> **e** <u>e</u> <u>\_</u> <u>e</u> <u>e</u> <u>e</u> <u>a</u> <u>e</u> <u>@</u> <u>@</u> <u>@</u> <u>e</u> <u>e</u> Phe Phe Phe Phe Phe 먊 뮵 Phe Phe 22 Ten Len ခြ <u>6</u> Compound 70 Leu Compound 74 Leu Compound 75|Leu Compound 76 Leu Fen Leu Leu <u>6</u> Leu Compound 77/Leu Compound 79|Leu Fen Leu E F 哥 Ten Len Compound 80|Leu 21 Compound 73 Compound 78 Compound 72 Compound 82 Compound 71 Compound 81 Compound 87 Compound 83 Compound 85 Compound 86 Compound 88 Compound 89 Compound 84 Amino Acid Position

Fig. 4E2

### 20 တ Val Val Val Val <u>ख</u> <u>ब</u> <u>ब</u> Sal <u>ਛ</u> <u>ھ</u> <u>Val</u> Val ۲ Ala <u>\$</u> NID <u>මූ</u> 35 픙 3 픙 픙 3 Olu 믕 믕 3 3 Glu 迈 all distributions 35 35 <u>응</u> 픙 <u>=</u> GE 3 <u>명</u> <u>B</u> 믕 3 35 16 a B B 픙 300 all G Glu <u>ම</u> 35 Glu 픙 35 3 Glu 3 5 3 Met Fen Leu Met ren Met na-Met Fea Met Leu Met Fen Leu Met 4 Glu 뜶 띪 띮 띪 띮 등 G 등 등 등 등 띪 Ala Ala 13 L/S Γ\S Lys Lys Lys Lys Lys Lys Lys Lys Lys Z\S Ala Ala $\sim$ Ser Ser Ser Ser Ser Ser Ser Ala Ala Ser Ser Ser Ser Ser Ser Pgly Pgly nar Fen Len Leu Fen Fen Fen Leu eu-Lea Ala Ala **19** 9 Asp SE CE Ala Ala 응 9 Ser Ala Ser $\infty$ 上 口口 占 上 Thr 币 Phe 9 Thr 正 크 Thr Thr Thr ī 三 三 Thr Thr 르 5 € ਲੇ <u></u> <u>පි</u> <u>ප</u> g\ <u>⊜</u> <u>ਲ</u>ੇ <u>≘</u> <u>ਲ</u> <u>ල</u> <u>@</u> <u>⊜</u> GIY <u>ප</u> 4 Asp က <u>ਨ</u> ਲੇ <u>පි</u> <u>영</u> <u>පි</u> <u>≅</u> <u>∂</u> ਲੁ ਲੇ ਲੇ ਲੇ ਲੇ <u>S</u> <u>≳</u> 3 Ala Ala Ala Ala Compound 24 Ala Compound 25 Ala Compound 26 Ala Compound 29 Ala Compound 30 Ala Compound 31 Ala Compound 32 Ala Compound 33 Ala Ala Compound 23 Ala Compound 28 Compound 21 Compound 22 Compound 27 Compound 34 Compound 35 Amino Acid Position

Fig. 4E3

26 27 28	Asn	Asn NH2	NH2 NH2	NH2 NH2	NH2	[2]									2
26 27 28 29 30 31 32 33 34 35 36 37 38 38 38 38 38 38 38 38 38 38 38 38 38	Asn			NH2	H2	[2]									2
26 27 28 29 30 31 32 33 34 35 36 37 37 31 32 33 34 35 36 37	Asn			NH2	H2	[2]	C								2
26 27 28 29 30 31 32 33 34 35 36	Asn			NH2	H2	[2]									2
26 27 28 29 30 31 32 33 34 35 35 15 15 15 15 15 15 15 15 15 15 15 15 15	Asn			NH2	H2	[2]									2
26 27 28 29 30 31 32 33 34 34 32 34 34 34 34 34 34 34 34 34 34 34 34 34	Asn			NH2	H2	[2]	C								7
26 27 28 29 30 31 32 33 34 32 33 34 35 33 35 35 35 35 35 35 35 35 35 35 35	Asn			NH2	H2	2	6:								
26 27 28 29 30 31 32	Asn			NH2	142	2	6								5
26 27 28 29 30 31	Asn			NH2	오	2	6:								2
26 27 28 29 30	Asn			NH2	윈	2	C:								5
26 27 28 29	Asn			NH2	H2	2									2
26 27 28	Asn			NF2	윈	2	0:								S
26 27		Sn			Z	NHZ	NH2	<u></u>	NH2	NH2	<b>ZHN</b>	NH2	X N	NH2	三
26		X	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn
7	<b>1</b> /S	Lys	Lys	Lys	Lys	Lys	Lys	Lys	eu Lys	Lys	۲ys	Lys	Lys	Lys	eu Lys Asn NH2
25	nen Len	Leu	ren	ren	ren	Leu	Leu	Teg	ren	ren	nəŋ	ren	Leu	Leu	Leu
	Pie	<u>a</u>	Phe	Tr	Phe	Tr	Phe	Trp	Phe	Trp	Phe	<u>T</u>	Phe	Trp	Phe
24	3	<u>ਤ</u>	වූල	ල	ළ	ම්	සි	ම්	<u>B</u>	믕	Glu	<u> </u>	Glu	ng B	<del>B</del>
	<u>e</u>	<u>e</u>	lle Ile	Ile	<u>le</u>	<u>le</u>	<u>e</u>	<u>=</u>	lle	lle	əII	<u>e</u>	lle	<u>le</u>	Ile
22 Dho	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe
	<u>ਭ</u>	Ee	Leu	Leu	Leu	ren	Leu	ren	Leu	ren	ren	Leu	Leu	Leu	ne-
Amino Acid Position	Compound 21	Compound 22	Compound 23	Compound 24	Compound 25 Leu	Compound 26	Compound 27	Compound 28	Compound 29	Compound 30	Compound 31	Compound 32	Compound 33	Compound 34	Compound 35

Fig. 4E4

## Fig. 4F1

								-	-											
20	Arg	Ala	Ala	Arg	Arg	Arg	Arg	Arg	Arg											
19	Val	<u>Ka</u>	Val	\al	Ala	Ala	Val													
48	Ala																			
17	<u>a</u>	gla	Glu	Glu	Glu	glu	Glu	Olu Glu	Ala	Ala	Glu	D G	Glu	<u>B</u>						
16	픙	Gla	Glu	Glu	gn Gl	Olu	Ala	Ala	<u>G</u> lu	<u> </u>	gla	<u>B</u>	Glu	Olu Glu						
15	<u>응</u>	Glu	Glu	Glu	Ala	Ala	Glu	Blu	n US	크 5	<u> </u>	<u>ng</u>	Glu	<u>G</u> la						
14	Ala	Ala	pGly	pGly	Met	ren	Met	ren	Met	Fen	Met	ren	Met	ren	Met	ren	Met	Leu	Met	ren
13	Glu	Gln	ШĐ	Gln	Glu	Gln	Gln	Gln	Gln	Glu	Gln	Gln	Gln	Gln	uр	uр	UВ	Gln	Gln	Glu
12	Lys																			
=	Ser																			
10	Leu	Lea	Leu	ren	Leu	Leu	Leu	Leu	ren	Leu	Leu	Leu								
9	Asp																			
8	Ser																			
7	Thr																			
9	Phe																			
5	Thr	1	Thr																	
4	र्ड	Gly	<u>G</u>	ङ	Glý	<u>ල</u>	<u>G</u>	<u>G</u>	<u>a</u>	<u>S</u>	<u>S</u>	Gly	<u>G</u>	Gly	<u>aly</u>	Gly	Gly	<u>G</u>	<u>ප</u>	Gly
က	Asp	Asp	Asp	Asp	Asp	Asp Gly	Asp	Asp		Asp	Asp Gly	Asp								
2	ලි	Gly	Gly	g Ś	Gly	<u>G</u> j	Gly	<u>G</u>	Gly											
_	Ala																			
Amino Acid Position	Compound 105 Ala	Compound 106 Ala	Compound 107 Ala	Compound 108 Ala	Compound 109 Ala	Compound 110 Ala	Compound 111 Ala	Compound 112 Ala	Compound 113 Ala	Compound 114 Ala	Compound 115 Ala	Compound 116 Ala	Compound 117 Ala	Compound 118 Ala	Compound 119 Ala	Compound 120 Ala	Compound 121 Ala	Compound 122 Ala	Compound 123 Ala	Compound 124 Ala
<u> </u>	Ŭ	Ŭ	Ŭ	ŭ	<u>ठ</u>	ن	ŭ	Ŏ	<u>  ර</u>	3/2		Ŏ	Ŭ	ರ	Ŭ	ŭ	ŏ	<u>ٽ</u>	ပ	ن ک

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39																				
38																				
37															_					
36																				
35																				
34																				
33																				
32																				
31																				
30																				
29	NH2	NH2	NH2	NH2	2HN	NH2	NH2	NH2	NH2	NH2	NH2	NH2	NH2	NH2	NH2	NH2	NH2	NH2	NH2	NH2
28	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn
27	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
26	ren	ren	Leu	Leu	ren	ren	ren	ne¬	ner	nej	Del Te	ren	ne Te	Leu	ren	ren	ren	Lea	Leu	Len
25	Trp	Phe	Trp	Phe	Trp	Phe	Trp	Phe	Trp	Phe	<u>d</u>	Phe	Tr	Phe	Trp	Phe	Trp	Phe	Trp	Phe
24	<u>a</u>	<u>ല</u>	ස	ළ	<u>응</u>	응	ng Celf	<u>B</u>	<u>응</u>	믕	먮	<u>B</u> B	මු	굞	Glu	<u>ല</u>	픙	ਛ	<u>명</u>	Glu
23	lle	<u>e</u>	<u>e</u>	<u>le</u>	<u>e</u>	<u>=</u>	<u>e</u>	<u>e</u>	<u>e</u>	e E	<u>e</u>	<u>e</u>	<u>e</u>	<u>e</u>	<u>le</u>	<u>e</u>	<u>e</u>	<u>e</u>	Val	Val
22	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Nala Ile	Nala Ile	Phe	Phe
21	Leu	Fed	<u>ह</u>	<u>e</u>	Leu	Leu	Teg	Le E	<u>8</u>	<u></u>	<u>e</u>	eg Fe	E E	Leu	Ala	Ala	Fe	哥	Fen	哥
Amino Acid Position	Compound 105 Leu	Compound 106 Leu	Compound 107	Compound 108	Compound 109 Leu	Compound 110	Compound 111	Compound 112 Leu	Compound 113	Compound 114	Compound 115 Leu	Compound 116 Leu	Compound 117 Leu	Compound 118 Leu	Compound 119 Ala	Compound 120 Ala	Compound 121 Leu	Compound 122 Leu	Compound 123 Leu	Compound 124 Leu

1//26

20	Arg	Arg	Arg	Arg	Arg											
19	Val	\ag	Val	\a	Val	Val	Val									
18	Ala	Ala	Ala	Ala	Ala											
17	Glu	gla	Glu	Glu	Glu	Olu	Glu									
16	Glu	Olu Glu	Glu (	Glu	Glu	Glu	Glu	ng B	Olu (	Glu	Olu	nle	Glu	Glu (	Olu (	Glu (
15	Glu (	) Jijo	Olu (	Olu (	)     	Olu (	Olu Glu	Olu (	ng B	Olu Glu	Olu Glu	Olu (	Glu (	elu (	Olu (	Olu (
14	Met (	ne Tea	Met (	ren (	Met (	) na-	Met	nə-	Met	ne	Met (	ne	Met (	en (	Met (	Met (
13	GII	등	Glu	Gln	G	뜮	등	등	등	등	등	<u>B</u>	등	GIn	Gln	GIn
12	Lys	Lys	Lys	Lys	Lys											
11	Ser	Ser	Ser	Ser	Ser											
10	ren	Fen	Leu	Leu	ren	Leu	Leu	Leu	Leu	ren	Leu	Leu	Leu	Leu	Leu	Leu
6	Asp	Asp	Asp	Asp	Ala											
8	Ser	Ser	Ser	Ser	Ser											
7	Thr	Thr	Thr	Thr	Ē	Thr	Th	Thr	Thr	Thr						
9	Phe	Phe	Phe .	Phe	he	Phe	Phe	Phe	Phe							
5	Thr	Thr	Thr	Thr												
4		Glý	Gly	Gly	<u>S</u>	3							ਲੇ	Gly		Gly
3	Asp Gly	Asp	Asp	Asp	Asp (	Asp Gly	Glu	Ala	Glu Ala	3lu (						
2	Gly /	Gly	Gly /	Gly /	Gly	Gly	Gly /	Gly	Gly Gly	Gly /	Gly (	3ly (				
<b>—</b>									1			1	l -			lis (
, Si	123	138	127/	128	123	138	131	132	133	134	135	136	137	138	139	140
Amino Acid Position	Compound 125 Ala	Compound 126 Ala	Compound 127 Ala	Compound 128 Ala	Compound 129 Ala	Compound 130 Ala	Compound 131 Ala	Compound 132 Ala	Compound 133 Ala	Compound 134 Ala	Compound 135 Ala	Compound 136 Ala	Compound 137 Ala	Compound 138 His	Compound 139 His	Compound 140 His Gly Glu Gly Thr
	ر ب	٠	_ں	<u>. U</u>	<u> </u>					2/2		<u>,                                    </u>				<u> </u>

Fig. 4F3

									-							
39													N N N	NH2		
38													Pro	Pro	NH2	
37	!												Pro	Pro	Pro	NH2
36													Pro	Pro	Pro	Pro
35													Ala	Ala	Ala	Ala
34													ලි	Gly	Gly	Gly
33													Ser	Ser	Ser	Ser
32													Ser	Ser	Ser	Ser
31													Pro	Pro	Pro	Pro
30													ट्ट	Gly	Gly	Gly
29	뽔	NH2	꿒	SHS	ਣ	Gly										
28	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Ala	Ala	Asn	Asn	Asn Gly	Lys Asn Gly
27	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Ala	Ala	Lys	Lys	Lys	Lys	Lys	Lys
26	Leu	Leu	Leu	ren	ren	nen	Ala	Ala	ner	Leu	ne Ten	ren	Fen	Leu	ren	Leu
25	Trp	Phe	Trp	Phe	Ala	Ala	Trp	Phe	Trp	Phe	<u>T</u> D	Phe	<u>Tr</u>	Phe	Trp	Trp
24	Olu Glu	O O O	Asp	Asp	O O O	ng Gir	ng Ogn	<u> </u>	픙	<u>B</u>	<u> </u>	<u> </u>	믕	Glu	Glu	Glu
23	taly	taly	16	Ile	<u>lle</u>	116	al E	<u> </u>	91	<u>e</u>	<u>=</u>	<u>lle</u>	<u>e</u>	Ile	Ile	lle
22	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe
21	Leu	Teg	ren	ren	ren	Fen	ne Te	ren	ne Ten	E F	<u>a</u>	ne Te	Ten Ten	ren	ren	Leu
Amino Acid Position	Compound 125 Leu	Compound 126	Compound 127	Compound 128	Compound 129	Compound 130	Compound 131	Compound 132	Compound 133	Compound 134	Compound 135	Compound 136	Compound 137	Compound 138	Compound 139	Compound 140 Leu
	<u> </u>	<u>. U</u>	٥	٥	U	<u> </u>			10	9/2	<u></u>	ی	<u> </u>	<u>U</u>	<u> </u>	0

Fig. 4F4

# Fig. 4G1

				7							5	_	<u></u>					6
20	Arg	Arg	Arc	Arg														
19	\alpha	Val																
8	Ala																	
17	픙	a G	Glu	Glu	gla	Glu	Glu	Glu	<u> </u>	<u>B</u>	n U	<u> </u>	Olu Glu	Glu	Glu	Glu	Glu	<u> </u>
16	a B	glu	Olu	glu	n Glu	Glu	Glu	<u>alu</u>	<u>응</u>	<u> </u>	<u>n</u> 5	<u> </u>	<u> </u>	Glu	Glu	Glu	Glu	<u>a</u>
15	n US	Glu	Glu	glu	Olu	gln	glu	n U	픙	<u> </u>	핑	<u> </u>	<u>Blu</u>	Glu	Glu	Glu	Glu	<u> </u>
14	Leu	Met	Leu	Met	Met	Met	neŋ	Met	ren	ren	Met	Leu						
13	Gln	Gln	Gln	ШĐ	Gln	Glu	Gln	믮	떒	등	glu	Glu	Gh	Glu	Gln	Gln	Gln	Gl
12	Lys																	
=	Ser																	
10	Ala	Leu	Leu	Leu	neŋ	neŋ	neŋ	ren	ren	ren	ren	ren	Leu	ren	nəŋ	neŋ	neŋ	ren
6	Asp	Asp	Asp	Asp	Ala	Asp	Asp	Asp	Ala	Asp	Asp	Asp	Ala	Asp	Asp	Asp	Asp	Asp
8	Ser																	
7	Thr	Th	THE	Thr	Thr	Thr	Thr	Th	Thr	Thr	Ţ							
9	Phe																	
2	Ihr	Thr	Thr	Thr	Thr	直	Thr	Ē	Ē	트	Thr	Thr	Thr	Thr	Th	Thr	Thr	Thr
4	Gly	Gly	G S	Ala	<u>a</u>	<u>S</u>	G S	Ala	ਤੁੰ	<u>a</u>	Gly	Ala	GIS	<u>G</u>	<u>S</u>	Ala	G G	Gly
3	n Glu	Olu Glu	Ala	38	픙	릀	Ala	<u> </u>	<u>응</u>	匮	Ala	Glu	a B B	<u>B</u>	Ala	Asp	all	Ala
2	GIŞ	<u>a</u>	<u>a</u>	<u>a</u> j	<u>a</u>	ट्ट	<u>G</u>	G S	ट्ट	G S	<u>Gly</u>	Glý	<u>a</u>	<u>G</u>	g	Glý	S S	<u>G</u>
<del></del>	Ala	Ala	His	His	His	Ala	His	His	E.E.	Ala	His	His	His	Ala	His	His	Ala	Ala
Amino Acid Position	Compound 141 Ala	Compound 142 Ala	Compound 143 His	Compound 144 His	Compound 145 His	Compound 146 Ala	Compound 147 His	Compound 148 His	Compound 149 His	Compound 150 Ala	Compound 151 His	Compound 152 His	Compound 153 His	Compound 154 Ala	Compound 155 His	Compound 156 His	Compound 157 Ala	Compound 158 Ala
⋖	<u>  ၓ</u>	<u>ರ</u>	<u>ප</u>	ರ	<u>  ප</u>	<u>  ර</u>	<u>ठ</u>	<u>। ठ</u>	20			Ö	l ひ	ŭ	ŭ	<u>  ර</u>	Ŭ	Ŭ

# Fig. 4G2

												<b>,</b>						
																	꽃	NE NE
39											ZHZ	Z E E					Ser	Ser
38											tPro	tPro	Z 동				Pro	Pro
37	꽃										Pro	tPro	Nme	SHN NH2			Pro	Pro
36	Pro	꿅	뫒								(Pro	tPro	Nme	hPro	NH2		Pro	Pro
35	Ala	Ala	Ala	NH2							Ala	Ala	Ala	Ala	Ala		Ala	Ala
34	Gly	ලි	G S	Gly	NH2						Glý	<u>a</u>	Gly	Gly	Gly		Gly	Gly
33	Ser	Ser	Ser	Ser	Ser	꾟	꿅				Ser	Ser	Ser	Ser	Ser	,	Ser	Ser
32	Ser	Ser	Ser	Ser	Ser	Ser	Ser	NH2			Ser	Ser	Ser	Ser	Ser		Ser	Ser
31	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	NH2		tPro	Pro	Nme	hPro Ser	Pro	NH2	Pro	Pro
30	G)	Gly	Gly	Gly	Gly	Gly	<u>aly</u>	Gly	Gly	NH2	Glý	Gj	Gly	Gly	Gly	Gly	Gly	Gly
29	Gly	Gly	Gly	Gly	Gly	G G	Gly	Gly	Gly	Glý	Gly	<u>a</u>	Gly	Gly	Gly	Gly	Gly	Gly
28	Asn	Asn	Asn	Asn	Asn		Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn
27	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
26	ren_	Leu	Leu	neŋ	Leu	ren	Leu	Leu	Leu	Leu	Lea	Fen	ren	ren	ren	Leu	Leu	Leu
25	Phe	Trp	Phe	Trp	Trp	Trp	Phe	Тī	Phe	Phe	Trp	Trp	Trp	Trp	Trp	Trp	Trp	Phe
24	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Olu Glu	ළි	Glu	OBC OBC	Glu	Olu	Glu	Glu	Olu	Glu
23	alle	lle	Ile	lle	116	əll	Ile	lle	<u> </u>	<u>=</u>	<u>lle</u>	<u>][</u>	lle	Ile	lle	Ile	alle	lle
22	θγ	Phe	Phe	Phe	Phe	əyd	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe	Phe
21	neŋ		ren	Leu		neT	ᇙ		8			a	-eu	neŋ	ne-		nen	e.
Amino Acid Position	Compound 141	Compound 142 Leu	Compound 143	Compound 144	Compound 145 Leu	Compound 146	Compound 147	Compound 148 Leu	Compound 149	Compound 150 Leu	Compound 151 Leu	Compound 152	Compound 153	Compound 154	Compound 155	Compound 156 Leu	Compound 157 Leu	Compound 158

- 159 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys-NH<sup>E</sup>octanoyl Asn-NH<sub>2</sub>
- 160 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys-NH<sup>E</sup>octanoyl Asn-NH<sub>2</sub>
- 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys-NH<sup>E</sup>octanoyl Asn Gly Gly-NH<sub>2</sub> 161 22/26
- 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys-NH<sup>E</sup>octanoyl Asn Gly Gly-NH<sub>2</sub> 162
- 163 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Asn Lys-NH<sup>E</sup>octanoyl-NH<sub>2</sub>
- 164 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Asn Lys-NH Eoctanoyl-NH2

### Fig. 4H

- 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Asn Lys-NH<sup>E</sup>octanoyl Gly Gly-NH<sub>2</sub> 165
- 4-Imidazolylpropionyl-Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Asn Lys-NH<sup>E</sup>octanoyl Gly Gly-NH<sub>2</sub> 166
- Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys-NH<sup>E</sup>octanoyl Asn -NH<sub>2</sub> 167 23/26
- Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys-NH Eoctanoyl Asn -NH2 168
- Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys-NH Eoctanoyl Asn Gly Gly-NH2 169
- Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys-NH Eoctanoyl Asn Gly Gly-NH2 170

### Fig. 4I

171 Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp

Leu AsnLys-NH<sup>E</sup>octanoyl-NH<sub>2</sub>

172 Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Phe

Leu Asn Lys-NH Eoctanoyl-NH2

Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Trp 173

Leu Asn Lys-NH<sup>E</sup>octanoyl Gly Gly-NH<sub>2</sub>

174 Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu Glu Ala Val Arg Leu Phe Ile Glu Phe

Leu Asn Lys-NH<sup>E</sup>octanoyl Gly Gly-NH<sub>2</sub>

Fig. 4J

### Effect of functional nephrectomy on Exendin-4 clearanc

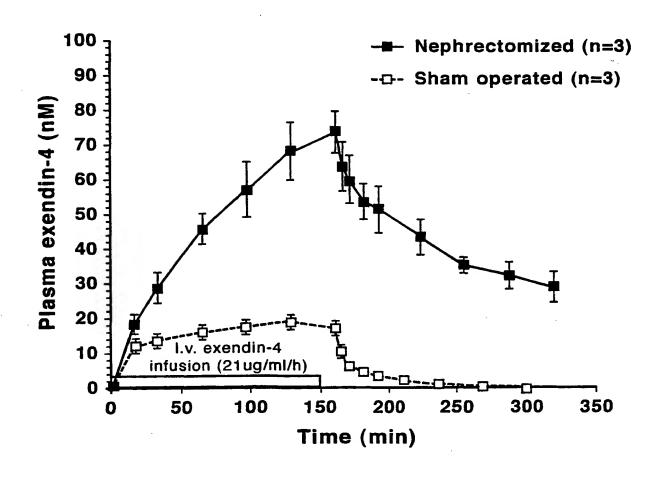


Fig. 5

### Terminal decay

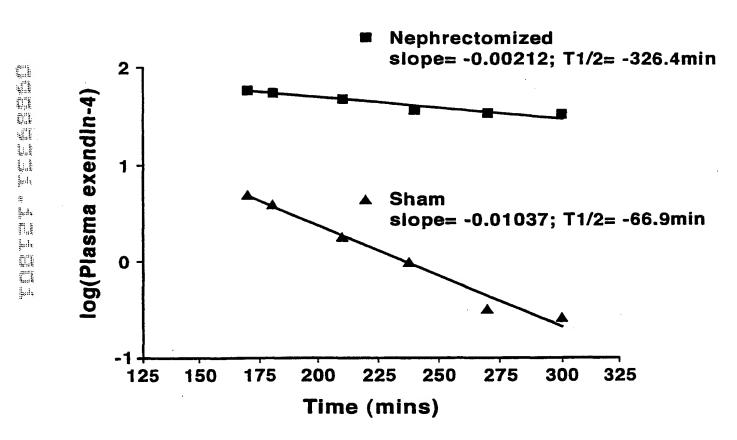


Fig. 6